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<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371</b>		U.S. APPLICATION NO (If known, see 37 CFR 1.5 <b>10 / 049972</b> Unassigned
INTERNATIONAL APPLICATION NO. PCT/US00/22476	INTERNATIONAL FILING DATE 16 August 2000	PRIORITY DATE CLAIMED 16 August 1999
TITLE OF INVENTION Internet Jack		
APPLICANT(S) FOR DO/EO/US Johnson et al.		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
<p>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <ul style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ul> <p>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ul> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <ul style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ul> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English lanugage translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>		
<p><b>Items 11 to 20 below concern document(s) or information included:</b></p> <p>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input type="checkbox"/> Other items or information:</p>		

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) Unassigned <b>10/049972</b>	INTERNATIONAL APPLICATION NO. PCT/US00/22476	ATTORNEY'S DOCKET NUMBER IREA0008		
		<b>CALCULATIONS PTO USE ONLY</b>		
<p><input checked="" type="checkbox"/> The following fees are submitted:</p> <p><b>BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):</b></p> <p>Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO . . . . . \$1040.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO . . . . . \$890.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO . . . . . \$740.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) . . . . . \$710.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) . . . . . \$100.00</p>				
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>		\$ 890.00		
<p>Surcharge of <b>\$130.00</b> for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).</p>		\$ 0.00		
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$
Total claims	55 - 20 =	35	x \$18.00	\$ 630.00
Independent claims	3 - 3 =	0	x \$84.00	\$ 0.00
<b>MULTIPLE DEPENDENT CLAIM(S) (if applicable)</b>			+ \$280.00	\$ 0.00
		<b>TOTAL OF ABOVE CALCULATIONS =</b>	\$ 1520.00	
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.		+	\$ 760.00	
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Processing fee of <b>\$130.00</b> for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).			\$ 0.00	
		<b>TOTAL NATIONAL FEE =</b>	\$ 760.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). <b>\$40.00</b> per property +			\$ 40.00	
		<b>TOTAL FEES ENCLOSED =</b>	\$ 800.00	
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<p>a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed.</p> <p>b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>07-1445</u> in the amount of \$ <u>800.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed.</p> <p>c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>07-1445</u>. A duplicate copy of this sheet is enclosed.</p> <p>d. <input type="checkbox"/> Fees are to be charged to a credit card. <b>WARNING:</b> Information on this form may become public. <b>Credit card information should not be included on this form.</b> Provide credit card information and authorization on PTO-2038.</p>				
<p><b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.</b></p> <p style="text-align: center;">V</p>				
SEND ALL CORRESPONDENCE TO: --Customer No. 22862 Glenn Patent Group 3475 Edison Way, Suite L Menlo Park, CA 94025				
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3/pr/s

## Internet Jack

### BACKGROUND OF THE INVENTION

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### TECHNICAL FIELD

The present invention relates to Internet connections. More particularly, the present invention relates to a new connection platform for connecting to the Internet that provides an ease of use to a user as does a phone jack.

### DESCRIPTION OF THE PRIOR ART

#### Internet Appliances vs. Internet-ready Appliances

15 Internet appliances already appear in the form of Web enabled televisions, screen phones, Web Tablets, and Email Readers, that take advantage of the Internet to send and receive data, browse Web sites, and other computer-type activities. Internet appliances may be characterized as requiring an Internet connection for primary usage, or as being permanently attached to an Internet link. In the latter case, the device may not need to be on-line continuously, but might always be attached to a phone jack or to some other Internet connection.

25 A new class of devices will soon emerge that will use the Internet to simply augment primary functions, and that will not require a permanent hook up to an Internet link nor will even require the Internet to function. Of such herein cited portable and/or Internet optional function devices (herein referred to interchangeably as Internet-ready devices or appliances), connection is required only when updating, sending, or receiving information. Internet-ready device categories may include, but are not limited to, toys, electronic books, personal health monitors, and MP-3 players, for example. A child's toy

or an electronic book may need only to connect to a specific Web site when downloading new content. After downloading the content, the device may be taken anywhere to be played with or used. Other devices such as digital cameras may need only to be connected when sending pictures to a photo-

5 developing center, to relatives, or to remote displays.

A notable characteristic of Internet-ready devices is that they are all mass market consumer electronic type products, and as such have very real cost and price constraints. It is noted that embedding necessary logic to connect a

10 device to the Internet means adding a modem, a CPU, a network stack, memory, and miscellaneous glue logic to the device. While the costs of adding such components are decreasing, for example, adding \$10 - \$20 in parts, it is noted that adding such cost to a device selling for \$25 is probably not practical.

15

#### Using the PC as the Connection

Today the PC is used as an interfacing device for the new class of Internet-ready appliances. The percentage of households owning PC's continues to grow, making a PC a more prevalent platform on which to base a solution. An

20 Internet enabled PC will already have a modem installed, along with a powerful processor, advanced operating system, and more than sufficient memory. The PC can easily accept new software drivers to communicate to attached devices, through serial ports, parallel ports, USB's, 1394's, or any other input-output (I/O) bus structure. However, there are many well-

25 documented problems with the solution of using PC's as the connection, such problems including ease of use, cost, and security. These issues make the PC an expensive and cumbersome solution at best, and an intimidating and adoption hindrance in the worst case.

30 A computer, with all of the advances in technology, is the most sophisticated and technically complicated product in many households. Installing device drivers, successfully attaching an appliance, and configuring network

connections are not for the faint of heart, and certainly not for the typical consumer electronics user. While driver installation is automated in recent releases, resolving driver conflicts and configuring parameters is not a task with which most users can cope. If an Internet-ready device is a child's toy,  
5 the process described herein above would most likely require adult supervision or visa-versa in many homes. Therefore, the process may be one that could not be performed by anyone. Techno-phobia may be enough to keep the solution of installing device drivers, successfully attaching an appliance, and configuring network connections from becoming the one of  
10 choice.

Cost is another major concern with using the PC as the connection platform. While a more than capable PC can be obtained for well under \$1000 today, the price tag is still beyond the point where people can afford to put one in  
15 every room of the house. Clearly, a proper solution is one in which the price of the connection feature makes it possible for homes to have multiple ports. The price of a telephone is a good analogy. When the cost of a phone was relatively high, most families had one phone centrally located within the home. As the cost of a phone dropped, people began putting one in every bedroom,  
20 the den, and even the bathroom.

Security and data integrity is another issue with using computers as the Internet connection platform. Various entry points in the upload and download process can be altered by users because the computer is not a closed  
25 system, thereby possibly violating the intended use by manufacturers. Take, for example, imagining a parent's concern if adult audio clips are downloaded into talking toys, or if downloadable game consoles access unauthorized pirate sites. These are concerns that also worry manufacturers of Internet-ready appliances, because it's their image, reputation, and revenues that are  
30 affected. Safe guards, such as, for example, the RSAC initiative, help in providing a process by which only intended content may be downloaded. However, this type of rating scheme depends upon compliant browsers and

upon proper browser setup to be effective. Also, such rating scheme cited herein above does not prevent a user from accessing unauthorized sites.

- Clearly, a new connection platform is needed to service the class of Internet-ready appliances. The new connection platform must meet required cost, security, and ease of use points that today are lacking in a computer oriented solution. At the same time the new connection platform must provide a standard connection port and must offer performance levels to which consumer electronic users have become accustomed. System crashes and long boot times are accepted behaviors in a PC world, however, are causes for product returns for normal personal electronics. It would therefore be advantageous to provide a preferred solution that is as stable as a television, and as cost affordable as a telephone.
- It would be advantageous to provide a new connection platform that makes it possible to have such a new connection platform for each possible Internet connection point in the home, whether the possible Internet connection point is a telephone jack, cable connection, or other means.
- It would be advantageous to provide a new connection platform system that is closed. That is, at no point does a user have to intervene or provide any additional information. When such a system is closed, the Internet connection only goes to the site specified by the appliance.
- It is noted that the prior art is using PC's as the connection to the Internet.

It is also noted that prior art combines Internet related components into one device, such as, for example, the Web TV box that contains, but is not limited to, a modem, protocol handler, network stack, Internet interface and telephone interface.

## SUMMARY OF THE INVENTION

The claimed invention herein provides a simple, economical, and safe way to connect a new class of Internet-ready devices and appliances to the Internet without the use of a personal computer (PC). The claimed invention herein provides an Internet dial-tone, so to speak, to applications ranging from toys and entertainment consoles to electronic books and health equipment just as a traditional telephone jack provides a plain old telephone system (POTS) dial-tone for phones, modems, and fax machines. The invention herein features a modem, network stack, and application protocols alleviating the need for sophisticated logic within attached devices. With one-touch, appliances can quickly and easily connect to the Internet.

## BRIEF DESCRIPTION OF THE DRAWINGS

15

Fig. 1 is a block diagram of a preferred embodiment of the claimed invention herein showing the invention for a telephone connection;

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Fig. 2 shows a schematic diagram of a device using the Internet jack according to the invention;

Fig. 3 shows a schematic diagram of a device using the Internet jack according to the invention;

25

Fig. 4 is a block diagram showing a preferred embodiment of logical blocks according to the invention; and

Fig. 5 shows a schematic diagram of another embodiment of the invention in which a raw socket is used directly.

30

## DETAILED DESCRIPTION OF THE INVENTION

The claimed invention herein provides a simple, economical, and safe way to connect a new class of Internet-ready devices and appliances to the Internet  
5 without the use of a personal computer (PC). The claimed invention herein provides an Internet dial-tone, so to speak, to applications ranging from toys and entertainment consoles to electronic books and health equipment just as a traditional telephone jack provides a plain old telephone system (POTS) dial-tone for phones, modems, and fax machines. The invention herein  
10 features a modem, network stack, and application protocols alleviating the need for sophisticated logic within attached devices. With one-touch, appliances can quickly and easily connect to the Internet.

### The Internet Jack

15 The claimed invention herein, also referred to herein as an Internet Jack, fulfills the need for a new connection platform discussed herein above in the Background section. The invention is generic enough to support a wide variety of devices from entertainment products to health equipment. Using the invention, any device requiring Internet connectivity is able to plug into an  
20 Internet Jack just as any device requiring power may be plugged into an AC outlet. The Internet Jack provides an Internet dial tone that furnishes a well-defined set of features and/or services and is similar to a telephone or cable TV jack. These services include, but are not limited to, providing a platform for Internet connectivity, all network protocol processing, and standard data  
25 decoding. Because these services are provided in a separate jack that can be used by a multitude and variety of products, the added cost of providing these services are removed from Internet-ready appliances. Therefore, adding such services and/or features through the claimed invention is much more practical and economical for mainstream consumer electronic products,  
30 than adding them to the products themselves.

- The preferred embodiment the invention has a minimum of two connection ports. One port attaches to a telephone or other Internet conduit. The second port is used for any Internet-ready device to attach. A simple one-touch operation allows a user to easily connect the device to the Internet, and
- 5 thereby retrieve or send data. An indicator is provided on the claimed invention to inform the user when the desired operation is complete. Because the invention is designed for the purpose of providing Internet connectivity for this new class of Internet-ready appliances, its user interface is streamlined in such a way that any person familiar with plugging in electronic products into
- 10 wall outlets can perform the operation. Display indicators on the invention can range, for example, from simple light emitting diodes (LED's) to small liquid crystal displays (LCD) screens that inform users on the status of operations.
- Ease of use is a main design criterion of the invention.
- 15 Fig. 1 is a block diagram of a preferred embodiment of the claimed invention herein showing the invention for a telephone connection. The invention 100 connects to a standard telephone jack 110 by a connection 106 from a telephone front end logical component 105, provides a plug 107 for a telephone 120 from the telephone front end logical component 105, and a connection 108 to an Internet-ready device from an Internet jack interface logical component 101 of the invention 100. A data modem logical component 104 is provided. The data modem 104 used in the preferred embodiment ranges from 2400 bps to 56 kbps, and to xDSL and cable modems, depending on desired performance level and cost target of the
- 20 invention. A network stack logical component 103 is provided. In the preferred embodiment it handles all TCP/IP and data link layer protocols needed for Internet connectivity. A protocol handler logical component 102 is provided that, in the preferred embodiment, provides built in support for POP3, SMTP, FTP, and HTTP. These protocols cited herein are standard
- 25 methods by which data is transferred over the Internet today. In addition to these protocols, the invention herein 100 provides DNS support for resolving server names and URL's and DHCP or other boot protocols for use where the
- 30

Internet jack resides on a broadband connection. The Internet jack interface block 101 handles communication with Internet-ready devices.

In the preferred embodiment, total silicon cost for the claimed invention

5 ranges from under \$10 on up depending on modem type used and other features incorporated into the device. The invention is thereby cost affordable to build as a standalone device or to embed into other devices that attach to telephone jacks, for example.

10 It is noted that with new Internet capable phones, answering machines, and fax machines, and the like, the cost of adding an Internet jack is almost negligible because such devices already contain the modem and network stack blocks. Furthermore, most of these devices also include protocol support, so that the only additional cost is for the Internet jack interface and 15 physical connector for Internet-ready devices. Therefore, the added cost of an Internet jack to such devices is under one dollar.

It is noted that other physical Internet connections, such as, for example, cable modems can also be supported. The claimed invention can easily be 20 added to, for example, STB's, Ethernet hubs, or other hubs that attach to any of the new home networking standards.

In the latter scenario described herein above, in another preferred embodiment, the Internet jack is a standalone device having a network 25 connection on one end, and an Internet-ready device connector on the other. This implementation is depicted in Fig. 2. The Internet 200 is connected to a Gateway 210 that is connected to a home network 230. Connected to the home network 230 are N PC's 240, an Internet appliance 250 and the Internet jack 260. Connected to the Internet jack is an Internet-ready device 270.

30

It is noted that examples of a home network 230 include, but are not limited to, a standard Ethernet, telephone line, electrical outlines, and wireless

means. Examples of an Internet appliance 250 include, but are by no means limited to, Web TV box, email, and a telephone.

It is noted that in the preferred embodiment, the claimed invention is a closed system that thereby provides additional advantage. As an example, an Internet-ready device provides information such as a URL or mail server name to the Internet jack. The Internet jack connects and then retrieves or sends the information. At no point does the user need to intervene or provide additional information. Also because the system is closed, the Internet connection only goes to the site specified by the appliance.

In one embodiment, a closed system such as described herein above uses a rating system, such as, for example, RSAC effectively on retrieved data. That is, all data must pass through the Internet jack prior to being downloaded to the Internet-ready device. In scenarios where a rating is used, the device would pass a rating level along with the target URL, mail server, or the like. Once data is retrieved from the target URL, mail server, or the like, it is filtered by the Internet jack, whereupon the Internet jack only passes along such data to the Internet-ready appliance if the data does not exceed the stated rating level.

In other embodiments, other security schemes are implemented to prevent accessing information on unauthorized sites. In this situation and in one embodiment, a key code is passed from the device to an Internet site, which then uses a pre-agreed upon algorithm to generate a response. This response is then sent back to the device thus authenticating the site to the device. This same mechanism can be used in the reverse path to prevent unauthorized devices from accessing a particular site.

30 Example 1: the Talking Toy

Fig. 3 shows a schematic diagram of a device using the Internet jack according to the invention. The Internet-ready device is a child's talking toy

300 using the Internet jack 310. Instead of being limited to the sounds shipped with the toy, technology now allows a child to update new sounds from a manufacturer's Internet site 330 through the Internet 320. The toy 300 is plugged into the Internet jack 310. The user presses a button 311 on the  
5 Internet jack 310. The Internet button on the connection platform 310 then initiates communication between the Internet jack 310 and the toy 300. Specifically, in this embodiment, an announcement byte is sent to the toy 300 from the jack 310. In response the toy 300 sends to the jack 310 a manufacturer's POP server for that particular toy. The Internet jack 310 then  
10 connects to the Internet 320, initiates a POP connection to the specified server 330, and retrieves an email message.

In this embodiment, the manufacturer's Internet site 330 is required only to keep one email message in the account, the message conveying the latest sound bytes for the toy. Examples of latest sounds bytes include, but are not limited to, sounds associated with seasonal events such as, for example, holidays, or sounds associated with media, such as, for example, television programs or movie releases. When the sounds file is downloaded onto the Internet jack 310, it is parsed by the jack 310. A typical example of the sound  
15 file is a .wav file. The data is decoded by the jack 310 and sent to the toy 300. Typically, for example, the Internet jack 310 strips headers and the like from the file sent by the manufacture's site 330, and only sends the a pure sound file, or .wav file, to the toy 300.

20  
25 The Internet jack 310 is not required to understand the data because the only service it provides in this situation is to pass requested data to the toy 300. It is the toy that determines the data as new sound data. The toy stores and processes the data accordingly. The toy 300 is required only to have capabilities to communicate with the Internet jack 310 and to store new  
30 information it receives. The toy is not required to have any network protocol knowledge or modem capabilities. Therefore, manufacturers can incorporate Internet jack connectivity and usage into products of all price ranges.

Example 2: the Electronic Book

The electronic book is another example of an Internet-ready device. By connecting the electronic book to an Internet jack a user can download new

5 content for the book without using or being required to use a computer. In this example the book provides a URL to the Internet jack. Once a connection is established the requested HTML page is downloaded and sent to the electronic book. Because the Internet-ready device contains an LCD screen, the device displays a list of books from which the user may select. The user  
10 selects a choice that causes the device to send to the Internet jack another URL. Requested data is then retrieved and delivered to the electronic book. HTTP can also be used to post credit card information or account numbers for billing purposes. If the electronic book is for a general reader, the book may not have any rating restrictions. However, in cases when the book is a child's  
15 book the book may provide along with the target URL a rating level that reflects the level of information it can accept. The resulting downloaded HTML data is then parsed. The ratings tag is checked prior to sending the downloaded requested information to the electronic book.

20 Fig. 4 is a block diagram showing a preferred embodiment of logical blocks according to the invention. A user interface logical block 400 is connected to a micro controller logical block 410. The user interface logical block 400 supports, for example, a display or a keypad, and the like. The micro controller logical block 410 performs such functionality as, for example,  
25 parsing and decoding. The micro controller logical block 410 is connected to an application protocols logical block 420. Examples of protocols supported by this block 420 are, but are not limited to, HTTP and POP. The application protocols logical block 420 is connected to a network stack 430. The network stack 430 supports such protocols as but is not limited to, for example, TCT  
30 and IP. The network stack 430 is connected to a physical connection logical block 440 that provides but is not limited to, for example, modem support and the Ethernet. The physical connection logical block 440 is connected by a

port 441 to the Internet 450. Similarly, the micro controller logical block 410 is connected by a serial port 411 to a client's Internet-ready device 460, such as, for example, a toy.

- 5 It is noted that the logical blocks can be implemented in hardware or software.

Another embodiment comprises the same components as in Fig. 4, but omits the user interface logical block 400.

- 10 It is noted that the preferred embodiment depicted by Fig. 4 is by no means limited by the limitations of contemporary technological limitations and can be adapted to accommodate technological advances of the future.

Other Devices

- 15 In another embodiment, along with provided protocols a raw socket interface is also supported by the claimed invention herein. The raw socket feature allows Internet-ready devices to use protocols, such as, for example, Telnet and RSH that are not necessarily natively supplied by the Internet jack.
- 20 When using a raw socket interface, the Internet-ready device supplies information such as, for example, a type of connection requested, such as, for example, TCP/UDP, the target Internet site, such as, for example, a server name, URL, or IP address, and target port number. Any data received by the raw socket connection is passed to the attached Internet-ready device. This operation mode is optional and is not needed for simpler applications.

Fig. 5 shows a schematic diagram of another embodiment of the invention depicted in Fig. 4 in which a raw socket is used directly. The user interface logical block 400 is connected to the micro controller logical block 410. The 30 micro controller logical block 410 connects directly to a raw socket layer 520. The raw socket layer 520 is connected to the network stack 430. The network stack 430 is connected to the physical connection logical block 440. The

physical connection logical block 440 is connected by a port 441 to the Internet 450. The micro controller logical block 410 is connected by the serial port 411 to a client's Internet-ready device 560 that requires a special protocol, such as, for example, Telnet, a proprietary protocol, or any standard protocol not provided by the Internet jack's application protocols.

5

#### Internet Jack Feature Specifications

Table A herein below provides a summary of features provided by the preferred embodiment of the Internet jack invention claimed herein.

10

Table A

FEATURE	COMMENT
Full TCP/IP network stack included	
Supported Application Protocols <ul style="list-style-type: none"><li>• POP3</li><li>• SMTP</li><li>• HTTP</li><li>• DNS</li><li>• FTP</li><li>• DHCP</li></ul>	
Raw Socket Support <ul style="list-style-type: none"><li>• 4 sockets</li><li>• Ability to set target and source port numbers</li><li>• TCP or UDP transport layers</li></ul>	
Internet Connection independent	Will work with telephone modems, cable modems, Ethernet, etc.
Low Cost	
Base64 and Quoted Printable data decoding	
Simple "One-Touch" operation	
Built in RSAC support	

Will support multiple Internet-Ready device connectors	It is expected that along with RS-232, IR and other connector types will be made available.
Auto BAUD rate detection for RS-232 type connections	

Summary

With the advent of Internet-ready devices, a solution to connect these appliances to the Internet in a cost-affordable, safe, and easy to use method

5 is needed. The Internet jack invention claimed herein provides these cited advantages in a well-defined closed system. The Internet jack invention claimed herein is designed to address, among other concepts, a particular market need in a most manufacturer-friendly and user-friendly manner possible in the spirit of the concept that the consumer electronics world is  
10 dominated by point solutions.

It is noted that the Internet jack invention does not preclude the use of the PC as a connection platform. The new connection platform claimed herein is compatible with the concept that it is expected that the PC can be used along  
15 with the Internet jack to provide a more feature-rich connection environment.

It is noted that communication protocol between Internet-ready devices and the Internet jack invention is the same as that between Internet-ready devices and a computer. Therefore, manufacturers are not required to build multiple  
20 versions or a variety of products to compensate for compatibility, wherein compatibility problems are due to specific products depending on specific connection platforms.

For example, citing the talking toy example herein above, a PC stores past  
25 files for reloading previous sound bytes. In another example, citing the electronic book example herein above, a PC stores a digital library. In

contrast, the Internet jack invention herein provides a simple alternative, low cost, secure, and easy to use substitute for applications that require a PC.

- In conclusion, the claimed invention herein provides a solution to the problem
- 5 of making the new class of Internet-ready appliances a reality because it incorporates necessary networking logic, thereby providing to the market a ubiquitous Internet dial-tone.

## CLAIMS

1. An apparatus for a user to connect an Internet-ready device to the  
5 Internet by an Internet connection independent means, comprising:  
at least two connection ports, wherein the first port connects to an Internet conduit, and the second port connects to said Internet-ready device;  
a user interface, allowing said user to initiate passing information between said Internet-ready device and said Internet, and having associated  
10 indicators to indicate to said user that said passing of information is complete;  
a protocol handler block for receiving and handling messages from said user interface and from said Internet-ready device, and for sending on said handled messages to a network stack block;  
said network stack block for handling an associated subset of said handled messages, and sending on to a physical connection block; and  
15 said physical connection block for connecting to said Internet.
2. The apparatus in Claim 1, wherein said indicators range from, but are not limited to, simple LED's to small LCD screens, cursor controls, and  
20 keyboards and/or keypads.
3. The apparatus in Claim 1, further comprising a standard telephone jack connection.
- 25 4. The apparatus in Claim 1, wherein said physical connection block comprises a data modem.
5. The apparatus of Claim 4, wherein said data modem ranges from 2400 bps to 56 kbps, or wherein said data modem is an xDSL or cable modem.

6. The apparatus of Claim 1, wherein said network stack block handles all network, transport layer, and data link layer protocols needed for Internet connectivity.

5 7. The apparatus of Claim 1, wherein said protocol handler provides any of the following application protocols: POP3, SMTP, HTTP, FTP, and DNS.

8. The apparatus of Claim 1, whereby said apparatus is built as a standalone device.

10

9. The apparatus of Claim 1, whereby said apparatus is built to be embedded into other devices.

15

10. The apparatus of Claim 1, wherein said data modem is a cable modem.

20

11. The apparatus of Claim 1, added easily to any of, but not limited to:  
STB's;  
Ethernet hubs; and  
hubs that are attached to new home networking standards.

25

12. The apparatus of Claim 1, wherein said connection between said Internet-ready device and said Internet is closed in that said user never intervenes to provide additional information.

30

13. The apparatus of Claim 1, further comprising a rating system, wherein said Internet-ready device passes a rating level to the Internet, whereupon only data not violating said rating level is passed back to said Internet-ready device.

35

14. The apparatus of Claim 1, further comprising security schemes to prevent accessing information of unauthorized sites.

15. The apparatus of Claim 14, further comprising a key code for passing  
from said Internet-ready device to said Internet, whereupon a pre-agreed  
upon algorithm is used to generate a response, whereupon said response is  
5 sent back to said Internet-ready device, thereby authenticating said Internet  
connection to said Internet-ready device.

16. The apparatus of Claim 15, used in reverse to prevent unauthorized  
Internet-ready devices from accessing a particular site.

10

17. The apparatus of Claim 13, wherein said rating system is RSAC.

15

18. The apparatus of Claim 1, wherein said initiating passing information  
between said Internet-ready device and said Internet is by said user pressing  
a button, thereby providing a one-touch operation.

19. The apparatus of Claim 1, further comprising raw socket support.

20

20. The apparatus of Claim 19, wherein said raw socket support further  
comprises any of, but is not limited to:  
support for multiple sockets;  
ability to set target and source port numbers; and  
TCP or UDP transport layers.

25

21. The apparatus of Claim 1, wherein said protocol handler comprises a  
micro controller.

30

22. The apparatus of Claim 21, wherein said micro controller provides  
Base64 and/or quoted printable data decoding.

23. The apparatus of Claim 21, wherein said micro controller communicates directly with said Internet-ready device and with a raw socket.
24. The apparatus of Claim 1, further comprising multiple Internet-ready  
5 device connectors.
25. The apparatus of Claim 1, further comprising auto BAUD rate detection for RS-232 type connections.
- 10 26. The apparatus of Claim 5, further comprising a pass through port whereby an existing POTS appliance may be connected.  
¶
- 15 27. A method for a user to connect an Internet-ready device to the Internet by an Internet connection independent means, comprising:  
providing at least two connection ports, wherein the first port connects to an Internet conduit, and the second port connects to said Internet-ready device;  
providing a user interface, allowing said user to initiate passing information between said Internet-ready device and said Internet, and having associated indicators to indicate to said user that said passing of information is complete;  
providing a protocol handler block for receiving and handling messages from said user interface and from said Internet-ready device, and for sending 20 on said handled messages to a network stack block;  
providing said network stack block for handling an associated subset of said handled messages, and sending on to a physical connection block; and  
providing said physical connection block for connecting to said Internet.  
25
- 30 28. The method in Claim 27, wherein said indicators range from, but are not limited to, simple LED's to small LCD screens, cursor controls, keypads and/or keyboards.

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29. The method in Claim 27, further comprising providing a standard telephone jack connection.
- 5 30. The method in Claim 27, wherein said physical connection block comprises a data modem.
31. The method of Claim 30, wherein said data modem ranges from 2400 bps to 56 kbps, or wherein said data modem is an xDSL and cable modem.
- 10 32. The method of Claim 27, wherein said network stack block handles all network, transport layer, and data link layer protocols needed for Internet connectivity.
- 15 33. The method of Claim 27, wherein said protocol handler provides any of the following application protocols: POP3, SMTP, HTTP, FTP, and DNS.
34. The method of Claim 27, whereby standalone capability is provided.
- 20 35. The method of Claim 27, whereby embeddable capability into other devices is provided.
36. The method of Claim 27, wherein said data modem is a cable modem.
- 25 37. The method of Claim 27, further providing easy connectivity to any of, but not limited to:
- STB's;
- Ethernet hubs; and
- 30 hubs that are attached to new home networking standards.

38. The method of Claim 27, wherein said connection between said Internet-ready device and said Internet is closed in that said user never intervenes to provide additional information.
- 5    39. The method of Claim 27, further providing a rating system, wherein said Internet-ready device passes a rating level to the Internet, whereupon only data not violating said rating level is passed back to said Internet-ready device.
- 10    40. The method of Claim 27, further providing security schemes to prevent accessing information of unauthorized sites.  
↓
- 15    41. The method of Claim 40, further providing a key code for passing from said Internet-ready device to said Internet, whereupon a pre-agreed upon algorithm is used to generate a response, whereupon said response is sent back to said Internet-ready device, thereby authenticating said Internet connection to said Internet-ready device.
- 20    42. The method of Claim 41, used in reverse to prevent unauthorized Internet-ready devices from accessing a particular site.
43. The method of Claim 39, wherein said rating system is RSAC.
- 25    44. The method of Claim 27, wherein said initiating passing information between said Internet-ready device and said Internet is by said user pressing a button, thereby providing a one-touch operation.
45. The method of Claim 27, further providing raw socket support.
- 30    46. The method of Claim 45, wherein said raw socket support further comprises any of, but is not limited to:  
support for multiple sockets;

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INTERNET-READY DEVICE  
AND APPARATUS

ability to set target and source port numbers; and  
TCP or UDP transport layers.

47. The method of Claim 27, wherein said protocol handler comprises a

5 micro controller.

48. The method of Claim 47, wherein said micro controller provides  
Base64 and/or quoted printable data decoding.

10 49. The method of Claim 47, wherein said micro controller communicates  
directly with said Internet-ready device and with a raw socket.

50. The method of Claim 27, further providing multiple Internet-ready  
device connectors.

15 51. The method of Claim 27, further providing auto BAUD rate detection for  
RS-232 type connections.

20 52. An apparatus for a user to connect an Internet-ready device to the  
Internet, wherein said apparatus is embedded into said Internet-ready device,  
said apparatus comprising:

a user interface block to connect to said Internet-ready device; and  
a physical connector block for connecting to the said Internet.

25 53. The apparatus of Claim 52, further comprising a protocol handler block.

54. The apparatus of Claim 52, wherein said embeddable devices  
comprise any of, but are not limited to:

Internet capable phones;

30 answering machines; and  
fax machines.

55. The apparatus of Claim 31, further comprising a pass through port whereby an existing POTs appliance may be connected.

## **Internet Jack**

### **ABSTRACT**

- 5 The claimed invention herein provides a simple, economical, and safe way to connect a new class of Internet-ready devices and appliances to the Internet without the use of a personal computer (PC). The claimed invention herein provides an Internet dial-tone, so to speak, to applications ranging from toys and entertainment consoles to electronic books and health equipment just as
- 10 a traditional telephone jack provides a plain old telephone system (POTS) dial-tone for phones, modems, and fax machines. The invention herein features a modem, network stack, and application protocols alleviating the need for sophisticated logic within attached devices. With one-touch, appliances can quickly and easily connect to the Internet.

15

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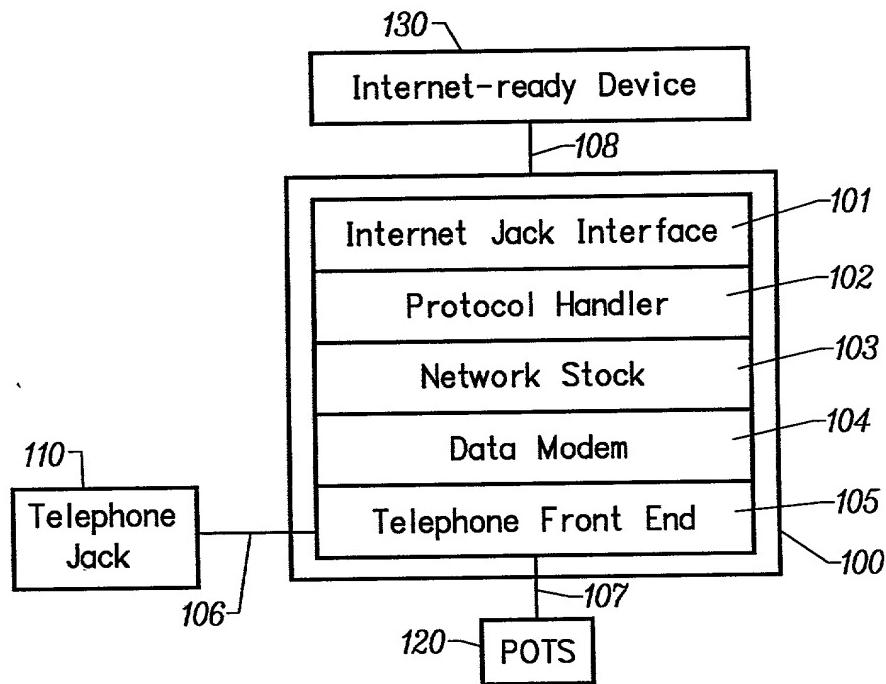


FIG. 1

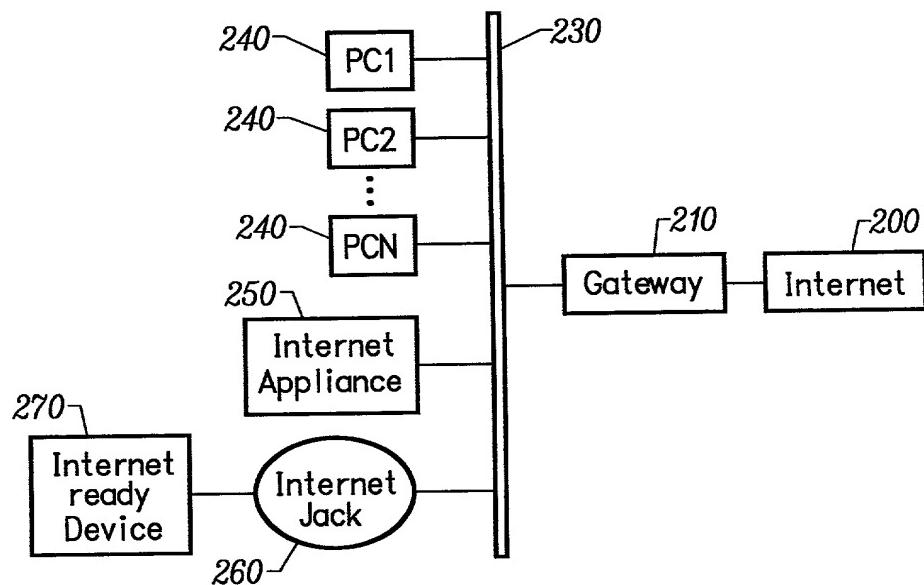


FIG. 2

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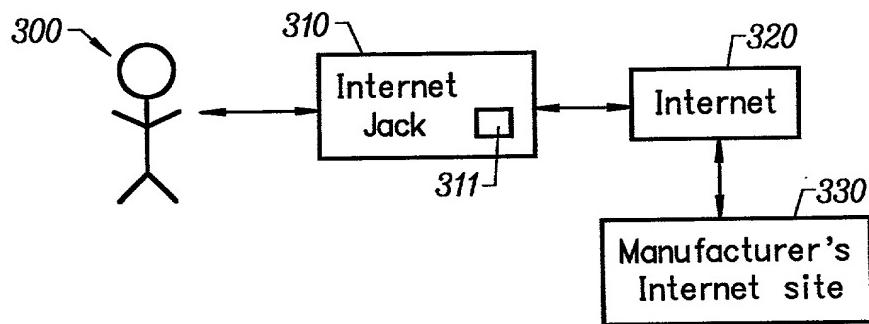


FIG. 3

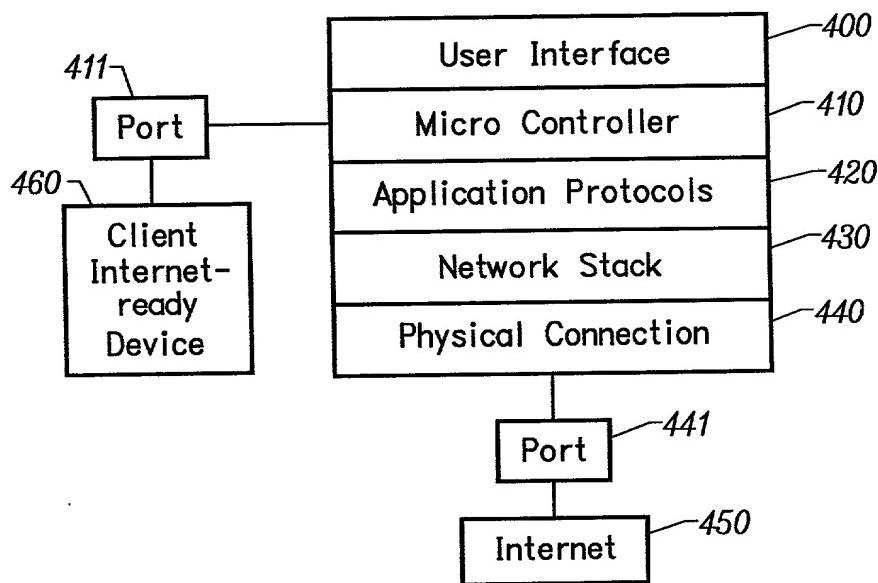


FIG. 4

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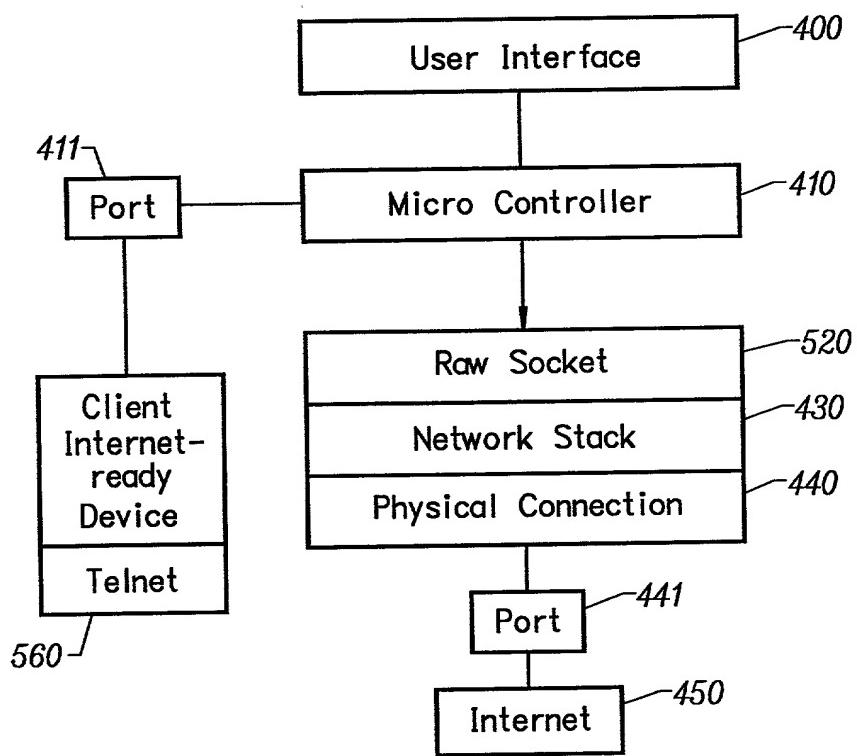


FIG. 5

**DECLARATION FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name;

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**INTERNET JACK**

the specification of which (check one)  is attached hereto, or \_\_\_\_\_ was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

=====

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)	Priority Claimed
	Yes      No
PCT/US00/22476      16/08/2000	<input checked="" type="checkbox"/> _____
Number    Country    Day/Month/Year Filed	_____      _____

Number    Country    Day/Month/Year Filed

=====

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

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=====

Attorney Docket No. IREA0008

I hereby claim the benefit under Title 35, United States code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

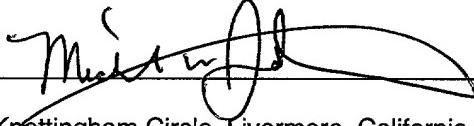
60/149,214  
Application Ser. No.

August 16, 1999  
Filing Date

Provisional- Pending  
Status: Patented, Pending, Abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Michael W. Johnson

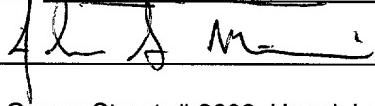
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